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COUNTRY Poland

REPORT

SUBJECT Gasworks in Poznan, Koszalin,
Gnieszno, and Olsztyn

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1. A report containing information on the municipal gasworks of Poznan, Koszalin, Gnieszno, and Olsztyn,

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2.

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GASWORKS AT POZNAN, KOSZALIN, GNIEZNO, AND OLSZTYN, POLAND (U)

Introduction

This report contains information on the municipal gasworks facilities in POZNAN, KOSZALIN, GNIEZNO (XU-7624, N52 33 E17 36) and OLSZTYN.

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1. Types of Gas Generating Furnaces

the following four types of gas generating furnaces commonly used in Poland.

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a. Vertical chamber furnace (pionowo-Komorowy piec)(Annex A)

The works included a generator supplying air pre-heated to about 500° C; a hot air recuperating element consisting of a system of air ducts or passages where the pre-heated air was further heated to about 700° C; a furnace consisting of from three to six furnace chambers (komory) where the coke was retorted; an electric conveyor for carrying the coke from the bin to the opening of the chambers; and a plant processing the chemical by-products.

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The dimensions of the furnace chambers varied from 800 mm x 1200 mm x 600 mm to 800 mm x 2 m to 4 m high.

The chamber was lined with fire brick made of silicious clay (glina krzemionkowa), chemical formula $Al_2 SiO_3$ or 4°. The silicious clay was imported from an unknown country, but the brick was made in Poland.

The single furnace chamber capable of processing about 300 kg of coke per 24 hours would produce about 1200 m³ of gas and an unknown quantity of chemical by-products. Its life expectancy when lined with Polish made fire brick was five to seven years; and 25 to 30 years when lined with imported German fire brick.

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The cost of new construction of a five-chamber furnace was about 750,000 zloties, which did not include the cost of the major elements of the gasworks, the building, and the chemical by-products processing plant.

Construction time was about 6 months. Costs and time of rebuilding of an old furnace were about 50 percent lower.

Large municipal gasworks (about 20 chambers or more) had at least two reserve furnace chambers, one or both of which were fired during rebuilding of an old chamber, or when the gas consumption increased.

Average gasworks (15 to 20 chambers) had at least one reserve chamber. Smaller gasworks usually had no reserve chambers.

The vertical chamber furnace was considered the most efficient and was the most popular type in Poland; it usually replaced the less efficient and exhausted horizontal chamber furnaces described in paragraph 1b below.

b. Horizontal chamber furnace (poziomo-komorowy piec)(Annex B)

In this type of furnace, the construction and function of the generator and the recuperator were merged into a single unit and single operation. In this system, the preheating of air was less efficient than in the vertical chamber unit with separate generator and recuperator. As a result, the gas production was lower by at least 25 percent. The furnace chambers, ovoid cylinders, were constructed in horizontal position. Average dimensions of a chamber were about 300 mm x 600 mm x 3 m.

The number of chambers varied from one to five, depending on the local gas demand. This type of gasworks was most frequently found in the so-called "recovered territories" (i.e. ex-German territories), and was gradually replaced by the more expensive vertical chamber works, as municipal funds became available.

c. Horizontal chamber-retort furnace (poziomo-komorowy retortowy piec)

The furnace was the simplest in construction, least expensive, and the most inefficient gas producer. It attained a maximum temperature of 400° C. [redacted] its efficiency at 50 percent of the vertical chamber furnace.

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It consisted of a generator-retort and ovoid cylinder chambers, dimensions about 550 mm x 500 mm x 1.5 m, constructed in a horizontal position. The number of chambers varied from one to three.

Construction of the furnace had been discontinued.

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d. Coopers' gas generating furnace

[redacted]
[redacted] The furnace was of a British design, produced in Poland only by one firm, the Office for Planning of Gasworks Industry (Biuro Projektow Przemyslu Gasowniczego) at Krucza Street Nr 14, WARSAW.

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The furnace was a compact unit, in which the basic working elements of the generator, the recuperator, the chamber and the extraction of the chemical by-products common to the above described gaswork were merged into one operation. The furnace was three to four stories high with fully automatic controls.

Coopers' furnace was considered most modern and efficient but was employed only in areas where gas consumption was great.

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2. Gasworks at POZNAN (Annex C)

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The gasworks consisted of two separate furnace buildings. An old building (Item 5, Annex C) housed two large furnaces of pre-war construction which were believed to be early models of Coopers' furnaces. They were about three stories high.

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In another building (Item 8, Annex C) were housed two new Coopers' furnaces, one of which (A) was fully operational, while the other (B), was under construction since 1959 and expected to be completed early in 1962.

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3. Gasworks at KOSZALIN (Annex D)

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The furnace building (Item 10, Annex D) housed four gas generating units, ABC and D, consisting of vertical chamber furnaces. Units A, B, and C were five chambers each, and D was a new unit under construction, consisting of six chambers. It was expected to be operational in 1960.

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4. Gasworks at GNIEZNO (Annex E)

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The works served a city of about 15,000 population. It consisted of three gas generating units, A, B, and C. Units A and B were operational, while unit C underwent total reconditioning. The unit was expected to be completed in late 1961. Unit B was scheduled for complete reconditioning in 1962. Unit A was relatively new.

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5. Gasworks at OLSZTYN (Annex F)

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a preliminary conference relative to construction of a new gas generating furnace.

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The plant consisted of four gas-generating units, A, B, C and D, consisting of vertical chamber furnaces. Units A, B, and C each had five or possibly six chambers; and D was the projected six-chamber unit with tentative completion date 1962.

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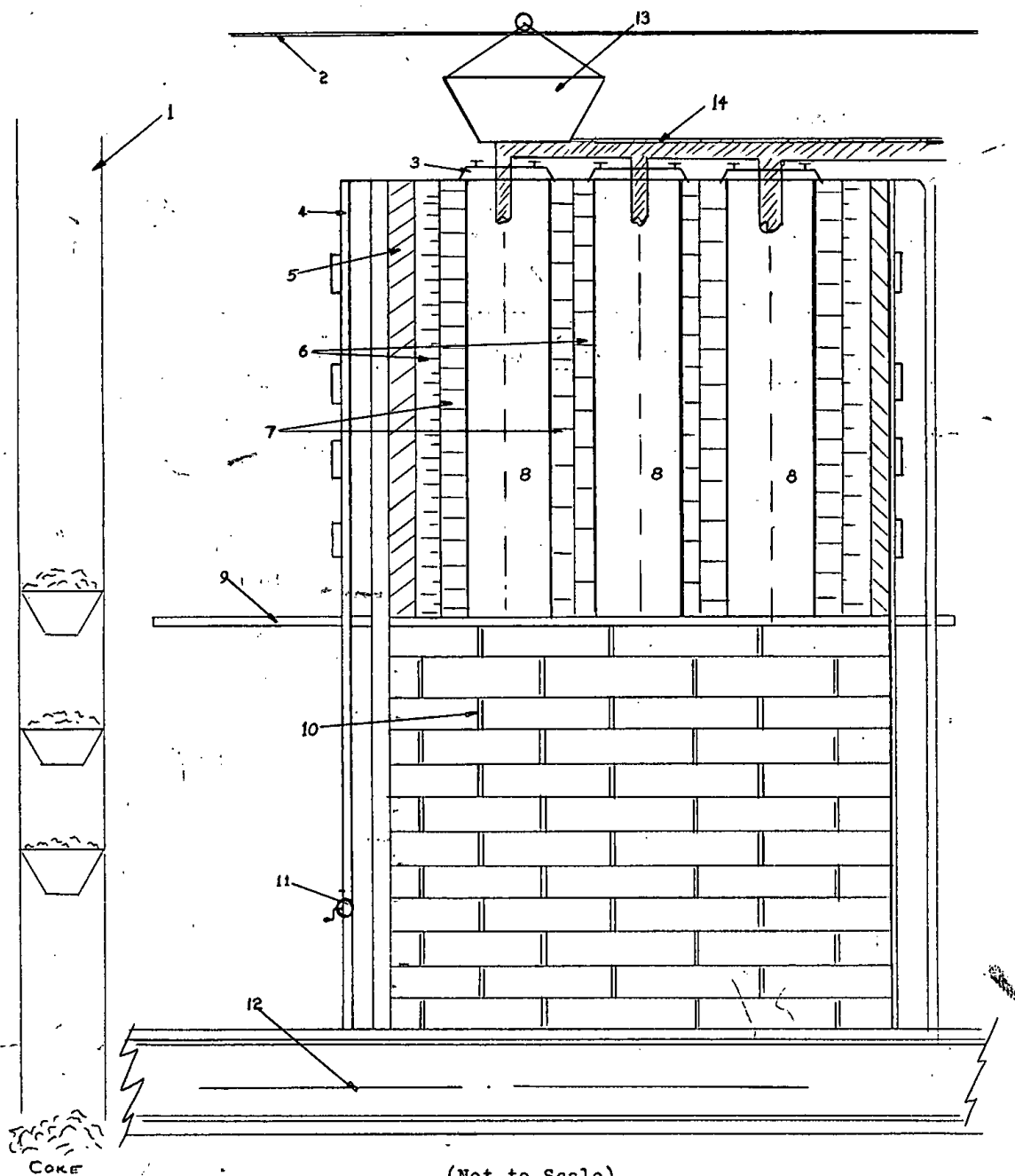
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A VERTICAL CHAMBER GAS GENERATING FURNACE, COMMONLY
USED IN POLAND

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**Legend to Annex A**

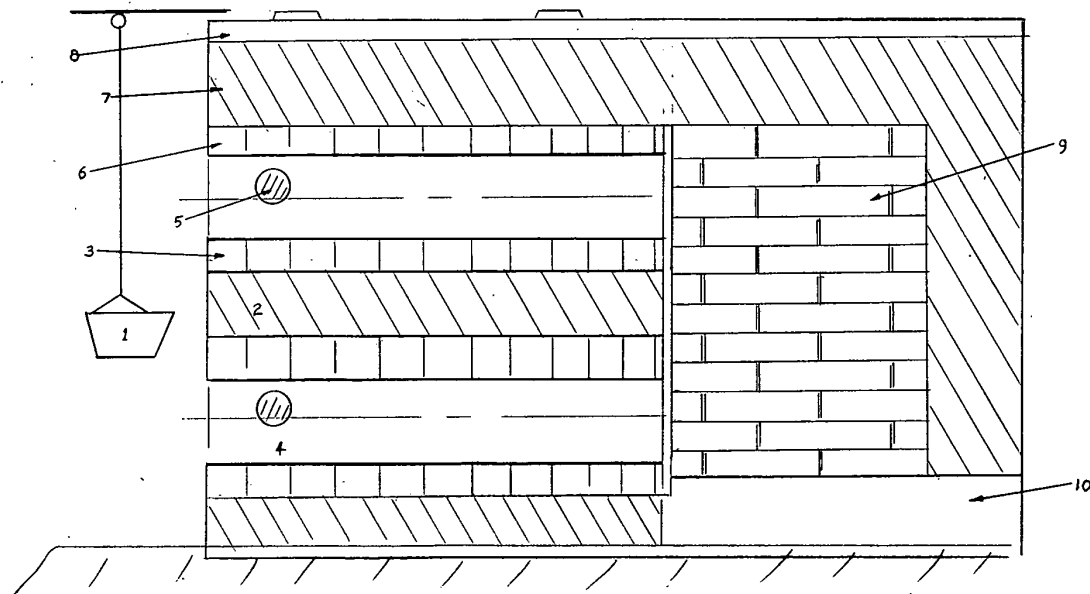
1. Electric conveyor for transporting coke from coke pile to furnaces
2. Transporting rail for coke bucket
3. Insulated metal lid on chambers
4. Outer I-beam housing and metal hoops encompassing the unit
5. Outer ordinary brick masonry of the furnace chambers
6. Outer fire brick masonry of the furnace chambers
7. Inner fire brick masonry of the furnace chambers
8. Furnace chambers
9. Graters
10. Recuperating element
11. Hand-operated crank operating and closing grates
12. Main generator channel.
13. Coke bucket
14. Raw gas receiver leading from the furnace chambers to the chemical by-product processing plant

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ANNEX B

A HORIZONTAL CHAMBER GAS GENERATING FURNACE COMMONLY USED IN POLAND

(Not to Scale)



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1. Coke Bucket
2. Outer ordinary brick masonry of the furnace chamber
3. Fire brick inner lining of the furnace chamber
4. Furnace chambers
5. Raw gas outlet
6. Same as Item 3 above
7. Same as Item 2 above
8. Outer I-beam housing and metal hoops encompassing the furnace
9. Recuperating element
10. Generator

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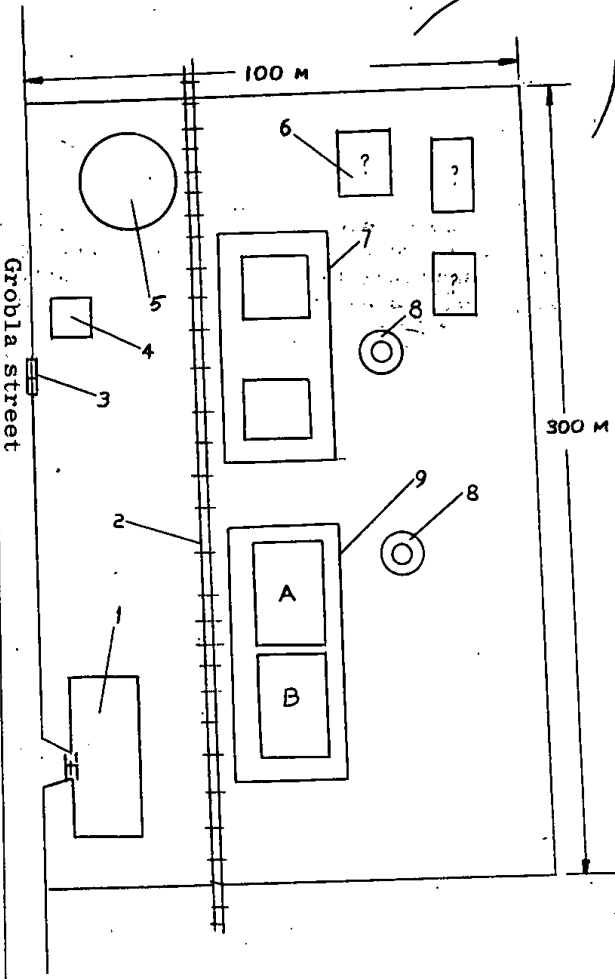
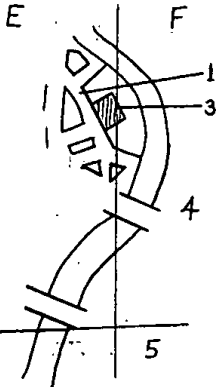
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Annex C

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PINPOINT LOCATION AND DESCRIPTION OF THE PUBLIC GASWORKS ON
GROBLA STREET, POZNAN, POLAND

- Legend:
- 1. GROBLA Street
 - 2. Gasworks



Map Reference:
Town Plan: POZNAN
Plan Dziecnic
Centralnych Pan-
stwowe Przedsie-
biorstwo wydawnictw
Kartograficznych
Warszawa 1958

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**Legend to Annex C**

1. Administrative building, a two-story red brick structure about 40 m x 15 m
2. Railroad siding
3. Vehicular entrance
4. Gate guard shack
5. Gas tank, about 15 m high, 20 m in diameter, unknown capacity
6. Unidentified one-story frame structures
7. Old gasworks building, a three-story brick structure about 60x30 m, containing two pre-war gas furnaces of unknown type, possibly early models of the Coopers'
8. Smoke stacks, unrecalled height
9. New gasworks building, a four-story brick structure, about 75 x 30 m, containing two Coopers' furnaces, A and B. Furnace A was completed and operational since 1959, while furnace B was under construction.

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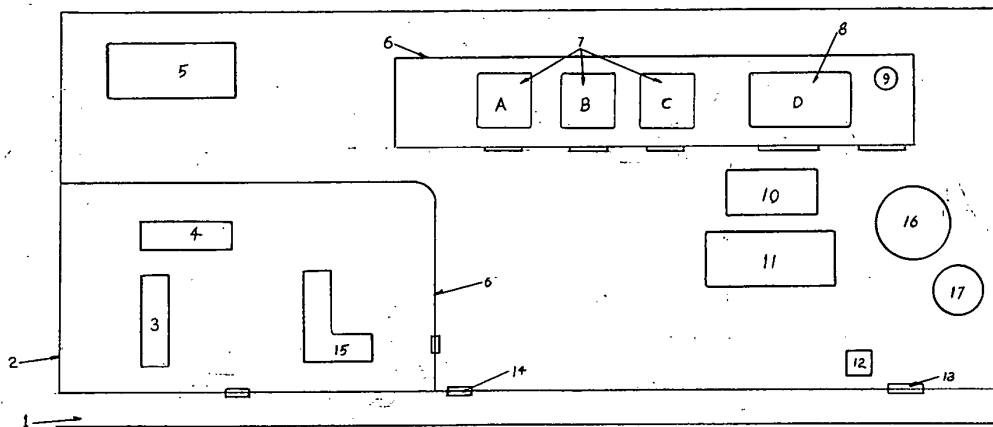
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ANNEX D

SKETCH OF PUBLIC GASWORKS AT KOSZALIN, POLAND

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(Not to Scale)



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Legend to Annex D

1. Unidentified street in unlocated section of KOSZALIN
2. Cyclone fence about 2 m high
3. Workers' quarters. A one-story stucco building with dormer windows and red tile roof, about 40 x 10 m, believed a three-family unit.
4. Same as Item 3 above
5. Barracks. A one-story frame structure with tar paper roof, about 50 x 15 m. It contained construction workers' quarters, and a dispensary.
6. Gasworks. A brick and steel industrial type building, about 70 x 25 x 7 m. The front of the building had several large steel doors suspended on rollers.
7. Three furnace units. Each unit consisted of five vertical chamber furnaces.
8. New furnace unit. The unit consisted of six vertical chamber furnaces.
9. Smokestack, constructed of red brick. It was about 15 m high.
10. Workshop. A one-story red brick structure, about 20 x 10 m.
11. Chemical by-product processing building. A one-story red brick building about 40 x 20 m.
12. Gate guard shack
13. Vehicular gate
14. Secondary gate
15. Administrative building, a one-story stucco L-shaped building about 50 x 50 x 10 m.
16. Gas tank. Main reserve gas tank, capacity about 15,000 m³, dimensions about 12 m in diameter, 8 m high.
17. Gas tank. Reserve tank about 8 m in diameter, 6 m high.

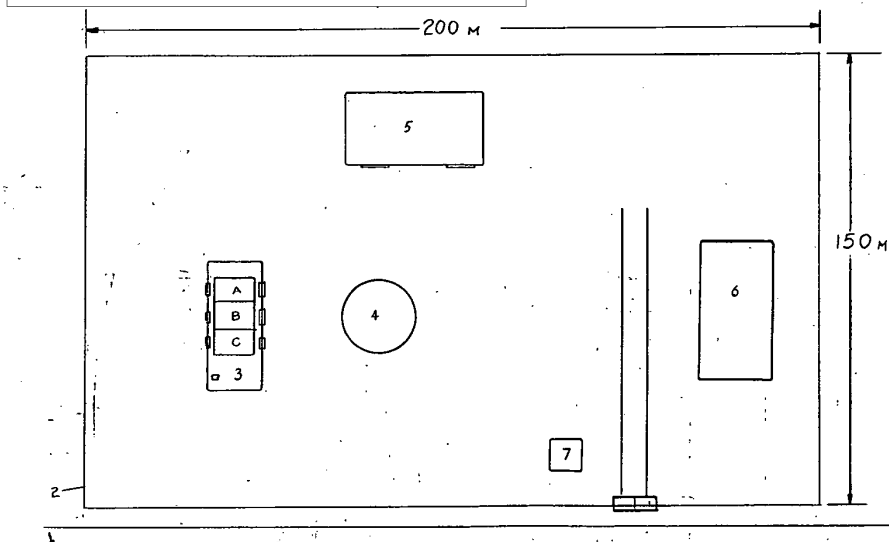
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ANNEX E
SKETCH OF PUBLIC GASWORKS AT GNIEZNO, POLAND

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(Not to Scale)



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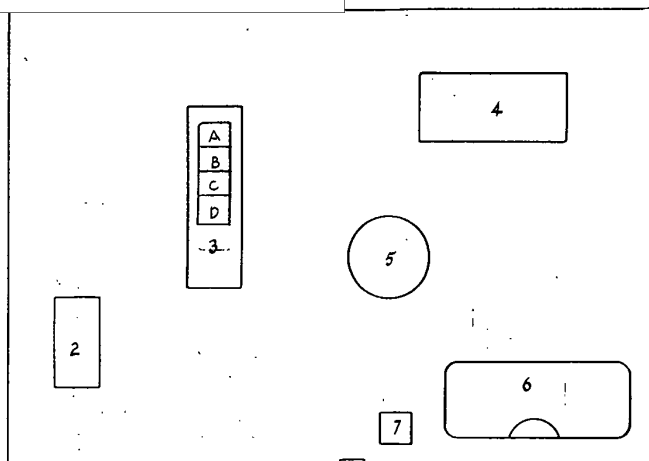
1. Unrecalled street
2. Wire fence, about 2 m high
3. Gasworks. A one-story, red brick steel reinforced building, with a tin roof, about 50 m x 25 m x 6 m. It contained three furnace units, A, B, and C, each consisting of three vertical chamber furnaces. On each longitudinal side of the building were three large steel doors suspended on rollers. The square smokestack was about 12 m high.
4. Reserve gas tank, dimensions and capacity unknown.
5. Chemical processing plant. A one-story red brick building with a flat tin roof, about 60 x 15 m.
6. Administrative building, a three-story stucco with a gable roof, about 40 x 15 m. The building also housed unidentified municipal offices in addition to the gaswork offices.
7. Gate guard shack

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ANNEX F

SKETCH OF PUBLIC GASWORKS AT OLSZTYN, POLAND

(Not to Scale)



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1. Unrecalled street
2. Frame barracks about 15 x 10 m
3. Gasworks, a three-story, red brick and steel building with industrial-type steel windows and steel doors, about 60 x 20 m. It contained four gas-generating units, A, B, C, and D, each consisting of five to six vertical chamber furnaces.
4. Chemical processing plant. A one-story, red brick building about 30 x 12 m.
5. Reserve gas tank. A round tank about 15 m in diameter and 10 m high.
6. Administrative building. A two-story dark gray stucco building with an arching main entrance.
7. Gate guard shack

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